CLAIMS

1. A method for drying or heat treatment of a web-formed material, preferably a glass fibre, wherein

the web-formed material, in contact with a gas-permeable dryer screen, is passed through a drying plant, and hot process air is blown against, and sucked through, the web-formed material, in order to dry said material,

water, in the form of steam, leaving the web-formed material is mixed with and discharged by the process air, at least part of which is recirculated whereas the non-recirculated process air is discharged as exhaust air and replaced by a corresponding part of supply air with a low water content,

for the purpose of obtaining an equalized velocity distribution of the process air through the web-formed material, a pressure drop is generated in a zone which, on the high-pressure side of the web-formed material, lies close to and extends across essentially the whole web-formed material, and

the process air is distributed in the region upstream of said pressure-drop zone by means of distribution members,

characterized in that

a first flow of process air is formed, with a cross section extending essentially across the whole width of the web-formed material and the extent of which along the direction of movement of the web-formed material is essentially smaller than its extent perpendicular to the direction of movement of the web-formed material, with a direction of flow essentially perpendicular to the surface of the web-formed material,

the first flow of process air is divided into a large number of jets directed essentially in a plane defined by the direction of movement and the normal direction of the web-formed material, said jets being distributed over essentially the

whole of the angular region facing the web-formed material, and that

the jets are allowed to mix with one another again into a second flow of process air, which is conducted through the pressure-drop zone and then against and through the web-formed material lying on the gas-permeable dryer screen.

2. A method according to claim 1, **characterized** in that the first flow of process air is divided into a large number of jets directed essentially such that their paths do not intersect one another, preferably such that they are essentially isotropically outwardly-directed.

3. A method according to claim 1, **characterized** in that the first flow of process air is divided into a large number of jets directed essentially such that their paths do not intersect one another, preferably such that, section by section, they are directed in the same direction.

4. A method according to claim 2 or 3, **characterized** in that the first flow of process air is divided into a large number of jets directed essentially such that the angular difference between two jets increases with the distance between the jets measured in the machine direction of the web-formed material.

5. A method according to claim 2 3, or 4, **characterized** in that the first flow of process air is divided into a large number of jets directed essentially such that the jets in a central section are antiparallel to a normal to the web-formed material and the other sections exhibit deviating directions with a successively increasing angle to the jets in the central section.

6. A method according to claim 2, 3, 4 or 5, **characterized** in that the first flow of process air is divided such that the ratio of the total cross-section area of the jets to the total area is lower in a central portion, where the direction of the jets is essentially perpendicular to the web-formed

material, than at the sides, where the direction of the jets lies essentially in the plane of the web-formed material.

7. A method according to any of the preceding claims, **characterized** in that a large number of jets are formed with an essentially circular cross section.

8. A method according to claim 7, **characterized** in that the jets are directed a certain distance after the first flow has been divided.

9. A method according to any of the preceding claims wherein

the web-formed material, in contact with a gas-permeable dryer screen, is passed through a drying plant divided into a plurality of sections in which hot process air is blown against, and sucked through, the web-formed material, in order to dry said material,

water, in the form of steam, leaving the web-formed material is mixed with and discharged by the process air, at least part of which is recirculated whereas the non-recirculated process air is discharged as exhaust air and replaced by a corresponding part of supply air with a low water content,

characterized in that the process air is recirculated separately within each section.

10. A method according to claim 9, **characterized** in that the recirculated process air is heated by direct burning of, for example, gas in the recirculation flow.

11. A device for drying or heat treatment of a web-formed material (1), preferably glass fibre, comprising

a gas-permeable dryer screen (3) for transporting the web-formed material (1), one or more fans (7, 27), blowing hot process air against, and sucking it through, the web-formed material (1), in order to dry said material,

a chamber (27a) surrounding the fan or fans (27) and extending essentially across the whole width of the web-formed material (1), one or more distribution members (91, 20, 30, 40), preferably located relatively near the fans (7, 27), to distribute the process air, and

a pressure-drop generating member (2) which, on the high-pressure side of the web-formed material (1), lies close to and extends across essentially the whole web-formed material (1),

characterized in that

the chamber (27a) has a limiting surface essentially parallel to the surface of the web-formed material (1),

this limiting surface has an opening (29a) extending essentially across the whole width of the web-formed material (1),

the extent of the opening (29a) along the direction of movement of the web-formed material is considerably smaller than its extent perpendicular to the direction of movement of the web-formed material (1),

a distribution member (20, 30, 40), placed outside the chamber (27a), completely covers the opening (29a),

the distribution member (20, 30, 40) consists of an arcuate perforated, sheet-formed element (90, 93, 94), and that

the pressure-drop generating member (2) consists of a plane perforated, sheet-formed element (2a).

12. A device according to claim 11, **characterized** in that the arcuate perforated, sheet-formed element (90, 93, 94), wholly or partially, is shaped as part of the envelope surface of a straight cylinder.

13. A device according to claim 11, **characterized** in that the arcuate perforated, sheet-formed element (93), wholly or partially, is shaped as part of the envelope surface of a straight circular cylinder, preferably essentially as half the envelope surface of a straight circular cylinder.

14. A device according to claim 11, **characterized** in that the arcuate perforated, sheet-formed element (94), wholly or partially, is shaped as part of the envelope surface of a straight, polygonal cylinder.

15. A device according to claim 11, **characterized** in that the arcuate perforated, sheet-formed element (94), wholly or partially, is shaped as part of the envelope surface of a straight, polygonal cylinder composed of essentially plane sub-elements (94a, etc.).

16. A device according to claim 11, **characterized** in that the arcuate perforated, sheet-formed element (94), wholly or partially, is shaped as part of the envelope surface of a straight regular, polygonal cylinder, preferably essentially as half the envelope surface of a straight regular, polygonal cylinder.

17. A device according to claim 11, **characterized** in that the arcuate perforated, sheet-formed element (94), wholly or partially, is shaped as half the envelope surface of a straight regular, dodecagonal cylinder.

18. A device according to any of the preceding claims, **characterized** in that the degree of perforation, in the arcuate perforated sheet-formed element (90, 93, 94), is lower in a central portion (90b, 93b, 94c, 94d) than at the sides (90a, 90c, 93a, 93c, 94a, 94b, 94e, 94f).

19. A device according to any of the preceding claims, **characterized** in that the perforation, in the arcuate perforated sheet-formed element (90, 93, 94), consists of essentially circular holes (95, 96).

20. A device according to claim 19, **characterized** in that the circular holes (95, 96) are formed with a rounded inlet and terminate in a neck (95a, 96a) projecting into the direction of flow of the process air.